FETC's Information Architecture:

The Framework

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Prepared for
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by
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I. Introduction

We, as the Federal Energy Technology Center (FETC), have many challenges facing us as we enter the 21st century. From the perspective of performing our mission, we must continue to: foster the development of clean fuels and high-efficiency power generation technologies; help clean-up the environmental legacy associated with DOE's nuclear weapons production sites; and apply our expertise to new problems and issues not even on today's horizon.

We face additional challenges because of our ever changing business environment. These challenges include increased competition, budget constraints, shrinking cycle times, the drive for increased responsiveness to shareholders, and a growing awareness of organizational performance through measurement. To meet these challenges, FETC must manage all of its resources more efficiently and effectively.

Information is one of the most important resources FETC must have available to accomplish its present and future work. The effective management of information and its use in synthesizing new knowledge products is vital to FETC's future success. Key to the management of this information is the establishment of an Information Architecture (IA).

There is no commonly accepted definition of Information Architecture. The Information Architecture Planning Team (IAPT) combined various IA concepts into the following functional definition.

An Information Architecture includes a narrative and pictorial representation of the information structure and flow within an organization, as well as a logically consistent set of principles that guide the engineering of its information and technology infrastructure.

This definition allowed the team to start with a common understanding of what an IA is and what organizational problems or difficulties might be addressed by it. The information infrastructure that an IA defines includes voice, written, knowledge, anecdotal, and electronic information.

Membership for the Team came from five Offices within FETC. Team membership was:

Martin Beck	Curt Nakaishi
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Ann Dunlap	Kevin Williams
Mark Estel	Joy Cumley, Facilitator
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Current Information Management Situation

FETC experiences daily situations in which the lack of a coherent Information Architecture leads to excessive expenditures of resources, and to individual and organizational frustration. Examples include:

INFORMATION AVAILABILITY - When the Director recently received a request from a Congressman asking about FETC's support in a specific area, the information was not easily found and reported. What was believed to be a simple request became a very complicated one. IA categorizes information within an organization and defines responsibility for the information. Managing the information within FETC will allow us to be more responsive to information requests.

NEW TECHNOLOGY APPLICATION - One of the new business teams was recently inquiring about the new Internet initiative, the Internet II. The team was interested in understanding how this new tool could be used to foster new FETC business. The approach taken by that team is counter to that suggested by the IA. Instead of having a new tool, the Internet II, and looking for ways to use it, the team should look at what processes are employed by the team and then consider how the Internet II complements and potentially assists those processes.

INTERNAL COMMUNICATION - The problem of poorly supported processes has also recently surfaced when a FETC manager tried to determine which person would be best suited for a particular assignment. That manager found that current information systems did not contain the desired data. This failure resulted from only partial process support by existing information systems. Having an IA in place helps to focus the development of information systems and minimize this type of failure.

SYSTEMS DEVELOPMENT - Recently, development of the Electronic Document Management System was terminated. Failure of the system to meet the center's expectations was caused, in part, from a lack of direct coupling between the system and key business processes as required by the IA. Direct coupling of the system to one process at the start would have resulted in more focused system development and immediate system use. It could then have

been expanded to meet the needs of other processes as experience and user familiarity with the system grew.

INFORMATION RELIABILITY - For information to be useful, it must be not only available but also correct. When management was recently trying to determine product team membership, information availability wasn't an issue. In fact, multiple team listings were found, each reporting different team memberships. This situation characterizes one of the problems of having uncoordinated, stand alone information systems. Having an IA to coordinate system development and insure that data duplication is minimized addresses this problem.

Benefits of an Information Architecture

There are many benefits that result from the adoption of the developed IA. Some of the more important benefits are:

- C Information systems and flows are clearly based on key FETC processes.
- C Support for information flows and key processes are identified and strengthened where appropriate.
- C Information redundancies are eliminated.
- C Data contained within information systems are consistent and more accurate.
- C The information structure is based on organizational goals.
- C Information system development is more efficient and effective.
- C The synthesis of technical and managerial information is more easily performed.
- C Changing business needs are more easily accommodated.
- C Accountability is improved allowing organizational progress and measurement of results

Information Architecture is not a Panacea

The implementation of an IA will not solve all of FETC's information management problems. Due to our ever changing business environment there will always be some business processes which have undocumented levels of detail or information needs which are not being fully met. Every possible question will not be able to be answered with a push of a button or a telephone call.

In addition, there are costs associated with IA, including resource commitments for implementation and management. The IA forces the adoption of a structure and requires discipline in information management. The willingness and

authority to enforce this implementation is also necessary. A philosophy shift to one that considers information to be a FETC wide asset is necessary for IA to be effective.

II. Framework

Methodology

The Team used a methodology which developed an IA which applies to all of FETC, not just one organizational element. That methodology has its foundation in IBM's "Information Systems Planning Guide."   Utilizing this Guide, the Team has identified the following:

C   IA Vision Statement, Objectives, and Policies
C   FETC's Key Processes
C   FETC's Major Information Categories
C   FETC's Business Model
C   FETC's Strategic IA Structural Model

In addition, the Team has determined:

C   an Alignment of Organizational Goals from the Institutional Plan with the IA, and
C   a definition of Stewardship of Information by Office within the FETC.

Each of these items is discussed below.

Vision Statement, Objectives and Policies

The vision, objectives, and policies developed by the IAPT helped focus our efforts. However, the greatest value of these will be realized during implementation activities.

Vision Statement

Shared information is the foundation of the FETC's activities. We share and communicate information in a way that supports effective decision making at all levels of the organization. Needed information is readily accessible in a usable format, meaningful to the user. Individuals do not hoard information but recognize it as a Center-wide resource.

Objectives

1.   The IA will promote the recognition that information is a significant FETC resource to be used in attaining the goals and objectives of the organization.

2.   Implementation of the IA will result in an information infrastructure that will function as a cohesive system by combining all elements within the architecture to ensure information provided is current, accurate, and consistent throughout all levels of the organization.

3.   Implementation of the IA will result in an information infrastructure that will facilitate the synthesis of FETC's technical and business information by promoting standard definitions and terms for information and data elements used throughout FETC.

4.   Implementation of the IA will result in an information infrastructure that will promote the design of systems and processes where open access to information will be the rule rather than the exception. Where appropriate, security is designed into all architectural elements, balancing information protection with ease of use.

5.   The IA will be stable through organizational and management changes.

Policies

1. All information in the IA has a steward who is responsible for its integrity and availability.

2. All information in the IA is freely available to those within the institution; it is only restricted when necessary.

3. Information format is changed only when there is an information need or a cost savings.

4. Information category and element definitions are documented and standardized.

5. Changes and additions to the IA are coordinated through a single individual or group.

6. Redundant systems will be consolidated provided the long-term benefit outweighs the cost.

7. The IA will be proactively managed with a high level of user input and feedback, planning for and shaping the future, rather than just reacting to present demands.

8. Information standards (such as security, compatibility, and interfaces) will be developed and followed.

Key Processes and Major Information Categories

The lists of Key Processes and Major Information Categories are provided in Tables 1 and 2. The Team used an iterative process to determine these. The process involved top down development, validation of the processes and categories by the Information Architecture Survey, and their subsequent use during the development of the Strategic IA Structural Model.

Table 1 - Key Processes

Key Process	Process Deliverable
Institutional Planning: The process by which FETC sets organizational goals and objectives to meet identified external and internal drivers and constraints.	Vision, Goals & Objectives for FETC
Measuring Performance: The process by which FETC monitors, measures, and improves its performance.	Effectiveness and efficiency of other processes
Information Planning & Management: The process by which FETC manages information.	Information planning (including Information Architecture)
Managing Non-Funding Relationships: The process by which FETC establishes and maintains a dialogue with the administration, our employees and on-site contractors, and the national, regional, and local citizenry.	Goodwill and assessment of political, social-economic environment
Assessing the Market: The process by which FETC determines demand for the Center's potential products and services.	Funding opportunities and funding provider and end user needs
Product Development: The process by which FETC designs the products and services of the Center.	Products and services to meet funding provider and end user needs
Funds In: The process by which FETC obtains agreement from stakeholders that provide funding.	Operating funds
Project Implementation: The process by which FETC implements, oversees and delivers innovative technical, energy and environmental solutions through in-house and contracted activities.	Energy and environmental solutions to meet end user needs
Procuring: The process by which FETC obtains goods or services and negotiates and administers contracts and assistance instruments for research.	External products and services
Managing Financial Resources: The process by which FETC manages financial resources through budget formulation, budget execution, and accounting.	Funds status and distribution
Managing Physical Resources: The process by which FETC manages its physical resources, such as, property, computer equipment , test equipment, security, buildings and facilities.	World-class physical resources
Managing Human Resources: The process by which FETC manages its human resources, such as hiring, developing and promoting.	DOE work force to meet goals and objectives

Table 2 -- Major Information Categories

Major Information Category	Information Example
Strategic Planning: Information resulting from the development of FETC's vision, mission, goals and objectives (also includes the business planning outputs that address how and why the vision, mission, goals and objectives were created)	SWOT analysis, market analysis and trends, new major thrusts, core capabilities, organizational goals and success measures, resource targets and mix, mission/vision, and integration of product plans and business sectors
Organizational Performance: Information generated as a result of institutional performance measurement	External review data, internal performance assessment, Presidential Quality Award (PAQ) application
Organizational Information: Information detailing the structure of FETC, including how FETC shares information and develops internal relationships	Formal lines of authority (Organizational chart), roles and responsibilities, teams and work groups, organizational process definitions, information architecture, description of informal or formal internal communication relationships; information system strategies and requirements
Political Stakeholder Interactions: Information describing the political, social-economic requirements	List of political entities who have an interest in the Center's activities. Political Stakeholder's needs, wants, perception, and level of satisfaction with FETC
Public relations: Information detailing documented methods and activities employed to promote a favorable relationship with the public and records of positive and negative outcomes from those actions	Press releases and other publications, Freedom of Information responses and community involvement information
End user Interactions: Information detailing documented relationships and interactions with the eventual users of FETC's products and services	List of end users, end users' needs, wants, perception, and level of satisfaction with FETC, FETC's response to end users' inquiry and number of contacts with end users
Product Lines: Information resulting from the definition and aim of a product offered by FETC	Budget forecasts, marketing plan, product plans, list of projects supporting the product
Technical Solutions: Information created by synthesizing and packaging project results generated through both in-house and contractor activities	Partial or full technical solutions
Relationship Tools: Information contained in the library of tools which may be used by the Center to define our relationships	Approved formats for: Memorandum of understanding, CRADA, contributed funds in agreements, interagency agreements, licence agreements, cooperative agreements, contracts

Major Information Category	Information Example
Partner Interactions: Information generated through partner interactions	Status of relationship and projects, including issues and actions
Project Planning: Information developed in the product development process	Individual project plans, new project concepts, current/past project technologies, reviews of concepts, technical publications and literature (in and out-side)
Project Execution and Results: Information generated during the performance of a project	Project background, project management plans, project status report, technical reports, technical data, final project reports
ES&H: Information created and used to insure the compliance with federal, state, and site ES&H regulations and policies	NEPA files, NEPA reports, SARS reviews, SARS reports, OSHA worker exposure criteria, hazardous waste manifest sheets, corrective action plans
Supplier information: Information generated as the result of the buyer/supplier relationship	List of suppliers, list of products, past performance information, specifications
Regulations, Policies & Procedures: Information contained in regulations, policies and procedural requirements of FETC	Laws and regulations, Congressional guidance, Industry standards, DOE and FETC orders, and other mandates
Procurement: Information required by or generated by the procuring process	Definition of requirement, cost, schedule, contract or financial assistance agreement, contractor performance information, status of agreement
Budget Formulation: Information required in developing the FETC budget	Congressional budget input, product manager input, requirements, requests, documented budgeting process, budget projection
Budget execution and history: Information generated during the administration and tracking of all expenditures	Actual budget expenditure by cost element
Research Facilities: Information detailing the physical resources used in the conduct of on-site research and development	Equipment and lab specifications and capabilities
Site Management: Information generated by the management of FETC on-site physical resources	Listing of buildings, construction and maintenance plan, site work plans, site and personnel security plans, geophysical data, computer equipment
Employment Administration: Information created by the acquisition, development, placement, retention, compensation, and well-being of employees	Recruitment and staffing data, pay, benefits and leave, performance and incentive awards, labor relations, training and employee development, discipline and position management

FETC Business Model

With the Key Processes and Major Information Categories determined for FETC, the next step involved relating the Key Processes to one another. This ordering of Key Processes resulted in the FETC Business Model.

The FETC Business Model contains three groupings of key processes: the Guiding Processes, the Business Cycle Processes, and the Supporting Processes. The Guiding Processes provide overall guidance and direction. FETC develops and provides our products and services through the Business Cycle Processes. The Support Processes provide for the necessary resources and facilities.

This FETC Business Model helps us understand interaction of the processes. It illustrates that changing one of the processes impacts others. (See Figure 1)

FIGURE 1 FETC Business Model

Business Cycle

Assessing the Market

Product Development

Project Implementation

Funds In

Guiding Processes

Institutional Planning
Measuring Performance
Information Planning & Management
Managing Non-Funding Relationships

Support Processes

Procuring
Managing Financial Resources
Managing Physical Resources
Managing Human Resources
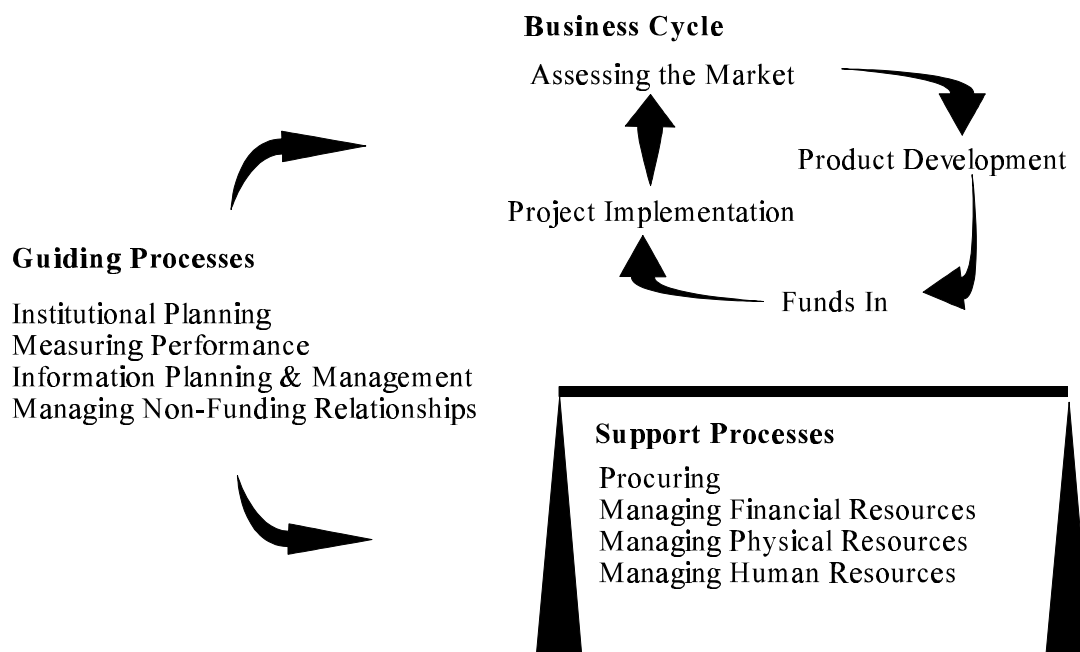
Strategic IA Structural Model

Development of the Strategic IA Structural Model requires an analysis of the relationships between the Key Processes and Major Information Categories. Data from the center-wide survey was used to generate this Model. Details of the Strategic IA Structural Model development are provided in Appendix A. The Strategic IA Structural Model contains seven Key Process and Information Centers. These are:

C   End User
C   Project
C   Institutional
C   Financial
C   External Relationships
C   Facilities
C   Human Resources

Their relationship to the Key Processes and Major Information Categories is shown in Figure 2. These Key Processes and Information Centers help to focus FETC's current and future information management activities. Effects these Centers have include:

C   A clear matching of information category to Key Process and Information Center will make the location of desired information easier. All employees will know where to find needed information.

C   Instead of requiring the development of individual information or tracking systems, the Institutional Plan activity dealing with the systems development (task 3-6) should be focused on the seven Key Process and Information Centers. These Centers will contain the desired individual systems, sub-systems, and components. The needed inter- and intra- system communication and integration will be more apparent with the emphasis now placed on these centers.

C   Existing information systems which contain data from more than one Center will need to anticipate the migration of that information to the appropriate Center. This migration will make it easier to keep information current, and accurate. Data duplication will be minimized, too.

FIGURE 2   Strategic IA Structural Model
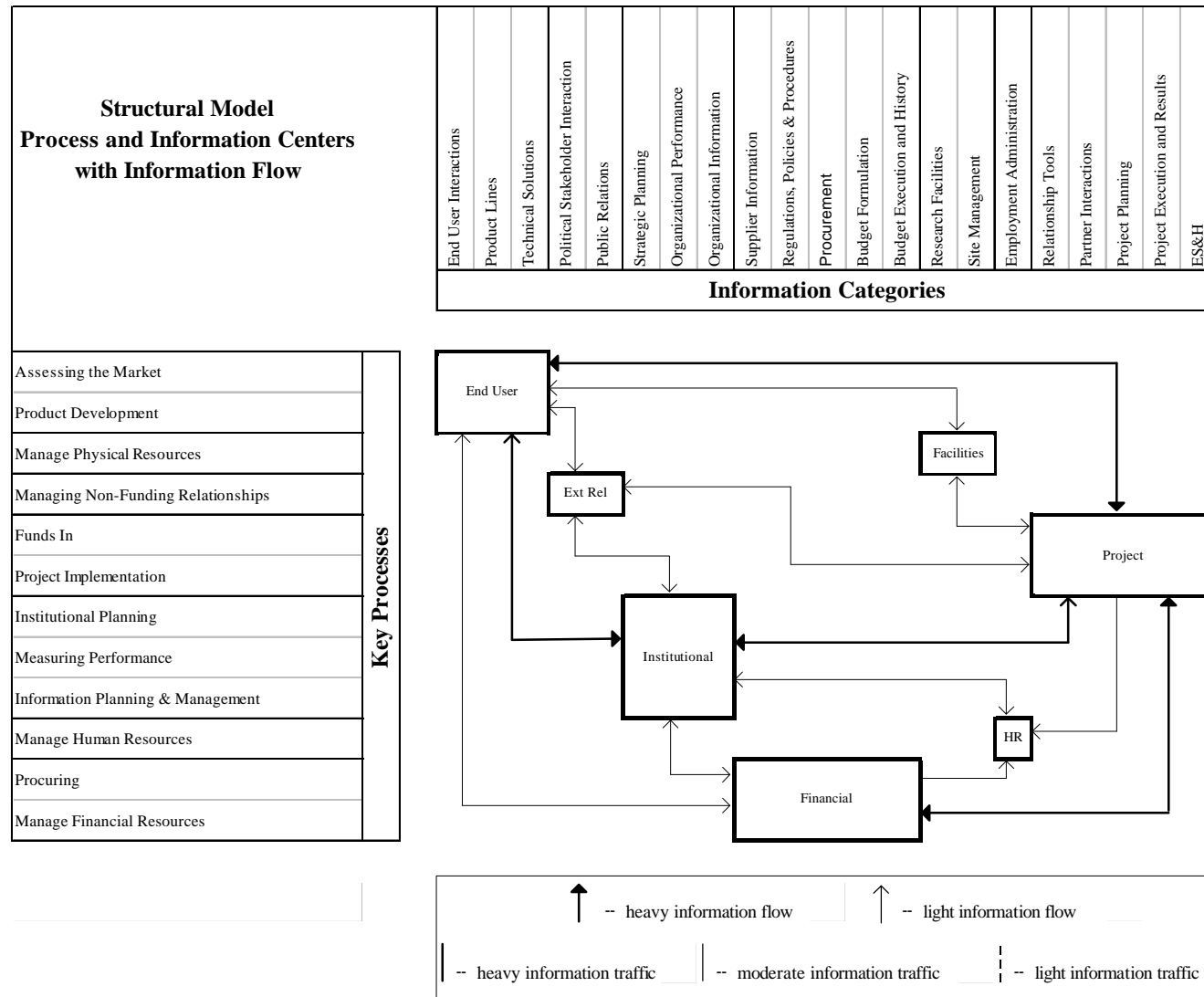
Within these Key Process and Information Centers, information is created and used. Information can also be created by one Key Process and Information Center and used by another. The lines in the Strategic IA Structural Model illustrate information flow between the Centers.

One of the results of creating the Key Process and Information Centers is the optimization of information flow between the Centers. This optimization occurs as the result of grouping Major Information Categories together that are created and used by a Key Process or Key Processes into a single Information Center.

The Strategic IA Structural Model should not be interpreted as an "as-is" picture. Rather, it is a representation of what could occur if we manage our information efficiently. The model illustrates how the processes should be grouped to share common information. It also shows how information would flow if the processes are grouped into Key Process and Information Centers. Implementing the recommended IA framework will have a positive impact on information flow and process performance.

The FETC Business Model and the Strategic IA Structural Model provide FETC a common basis for discussion of the meaning and application of IA.

Application of Information Architecture

Even at this high level of IA development, application of the IA can be of immediate benefit to FETC. Development of the Key Processes, Major Information Categories, the FETC Business Model and the Strategic IA Structural Model are noteworthy FETC advancements. These tools can be put to use immediately within the organization.

Institutional Plan Task 3-6 should be focussed on the seven Key Process and Information Centers that cover all FETC activities. Further, Institutional Plan Task 3-1 team should use the Key Processes as the starting point for bench marking FETC key processes. Appendix B provides a discussion of the IA's interaction with other Institutional Plan tasks. The Key Processes are also an appropriate starting point for business process re-engineering activities. In addition, divisions and individuals can benefit from gaining an understanding of how their work relates to the Key Processes and information within FETC via the High Level Structural Model.

The IAPT developed two charts that illustrate the intrinsic value of IA to the organization. An additional level of detail will be added to these charts by the Information Architecture Transition to Implementation (IATI) team as they work

toward IA implementation. Appendix E provides additional detail on the IATI planned activities.

Alignment of Organizational Goals with IA

A situational analysis for FETC was performed with the objective of gaining an understanding of its business goals and objectives. The information used in this analysis was obtained from the FETC Institutional Plan.

The Team analyzed the organizational goals (to the sub-goal level) with respect to the Key Processes. Figure 3 illustrates this analysis. Appendix C provides details of how the analysis was performed.

Information Stewardship

Figure 4 designates Major Information Category stewardship at the Office level. Information stewards are responsible for the availability and integrity of the data in their care. A dot in figure 4 indicates that the vast majority of the information under a Major Information Category will be the responsibility of the corresponding FETC Office. In cases where stewardship of information under a Major Information Category will be split between more than one FETC Office, two dots are noted in the column. Duplication of stewardship will not occur. Additionally, stewardship responsibilities will not necessarily be delegated to the position where information is created, read, updated or deleted. As the next levels of information under each Major Information Category are defined, information stewardship must be delegated to positions within FETC. The value of this activity is for the assignment of accountability for the information .

Figure 3 -- Alignment of Organizational Goals with IA

FETC Goals — Goals VS Key Processes	Institutional Planning	Measuring Performance	Information Planning & Management	Managing Non-Funding Relationships	Assessing the Market	Product Development	Funds In	Project Implementation	Procuring	Manage Financial Resources	Manage Physical Resources	Manage Human Resources
GOAL 1 -- Delight Our Stakeholders Through Mission Accomplishment												
Our activities are aligned with stakeholder needs and requirements	X				X	X		X				
Our stakeholders know about our mission accomplishment	X	X	X	X			X	X				
Our results are making a significant contribution to solving national and international energy and environmental problems.	X	X		X		X		X	X			
GOAL 2 -- Achieve Stable Funding												
We place greater emphasis on R&D activities at earlier stages of the development spectrum					X	X		X				
We achieve the funding level mix depicted in the Institutional Plan	X				X		X		X			
We obtain funding from each new business area					X	X	X					
GOAL 3 -- Manage for Results												
We have efficient and effective processes and systems in place		X	X						X	X	X	X
We use measurements to continually improve our work processes, stakeholder focus, productivity, and responsiveness.		X										
Our overhead rate must be comparable with, or below, that of well-managed, world-class laboratories in the private sector.	X							X		X	X	X
FETC wins the President's Quality Award		X						X				
Our on-site infrastructure is best-in-class, cost-effective, and aligned with FETC's mission.		X	X						X	X	X	X
Information is available to make sound business decisions.			X		X					X		
GOAL 4 -- Utilize the Full Potential of FETC's Work force												
All employees understand and embrace FETCs goals, guiding principles, and strategic intent.	X			X								
Our stakeholders perceive each FETC employee as someone they want to work with		X		X								X
All FETC employees, both Federal and site support contractor, contribute effectively to our success.		X										X
We respond rapidly to initiatives and opportunities.			X		X	X		X	X			X
We seek increased diversification of our work force, including gender, ethnicity, age, and skills.	X											X
GOAL 5 -- Achieve Recognition as a Regional Asset												
FETC is known in our immediate energy and environmental corridor communities as a responsive, valuable asset, and as a good neighbor.		X		X					X			

Figure 4 -- Information Stewardship

Information Stewardship FETC Offices VS Information Categories	Strategic Planning	Organizational Performance	Organizational Information	Political Stakeholder Interaction	Public Relations	End User Interactions	Product Lines	Technical Solutions	Relationship Tools	Partner Interactions	Project Planning	Project Execution and Results	ES&H	Supplier Information	Regulations, Policies & Procedures	Budget Formulation	Budget Execution and History	Procurement	Research Facilities	Site Management	Employment Administration
DI - Office of the Director	●	●		●					●	●					●						
EA - Office of Systems & Environmental Analysis					●			●													
PM - Office of Project Managment										●	●	●									
PS - Office of Program Support and Site Operations			●										●	●		●	●	●		●	●
ST - Office of Science and Technology											●	●							●		
FS, PW & EM - Office of Product Management (3 Offices)						●	●			●						●					

Information Stewards are responsible for the integrity and availability of the information

III. Recommendations

The development of this level of an Information Architecture establishes one of the key foundation pieces for the FETC. Adherence to the IA promises to improve not only the way information is stored and communicated within FETC, but also the functioning of many other administrative and business activities. Because of the fundamental role the IA can play in the future of FETC, the championing and ultimate acceptance of the IA must occur at the highest management levels.

Specific recommendations are:

C **Adopt Vision, Objectives and Policies:** All elements within FETC, (particularly senior management, IRMD, and OSEA) must understand and apply the IA vision, objectives and policies.

C **Accept Key Processes & Major Information Categories:** As part of the IA, the FETC Director and Associate Directors should accept the developed Key Processes and Major Information Categories.

C **Adopt FETC Business Model:** FETC Director and Associate Directors should adopt the FETC Business Model as the recognized relationship among FETC's Key Processes.   The model reinforces the fact that all the processes are interrelated and that a change in one process impacts others

C **Use Strategic IA Structural Model:** The Strategic IA Structural Model should be used by FETC (particularly OSEA and IRMD) in the planning and development of information systems. Developed communication plans should be consistent with the model.

C **Adopt the concept of information stewardship:** FETC Director and Associate Directors should adopt and support the concept of information stewardship as the IA implementation moves forward.

C **Upon Acceptance of these Recommendations, they should be immediately transferred to the Institution Plan Oversight and Communications Team for use.**

IV. Appendix

A. Strategic IA Structural Model Development

B. Information Architecture Interaction with Institutional Plan Tasks

C. How Key Processes Support Institutional Goals

D. Information Architecture Planning Team Charter

E. Information Architecture Transition to Implementation Team

F. Survey Analysis

G. Survey

Appendix A.

Strategic IA Structural Model Development

Development of the Strategic IA Structural Model requires an analysis of relationships between the Key Processes and Major Information Categories. This analysis is performed with the use of a matrix. The Key Processes were placed on one axis of the matrix in the order of the FETC Business Model. On the other axis the Major Information Categories were placed in random order. Major Information Categories created by a Key Process were designated by placing a "C" at the intersection of the process row and information column. These relationships are key to the architecture. The survey data was most helpful in this application. Major Information Categories used by each Key Process were designated by placing a "U" on the chart. When a Major Information Category is both used and created by a Key Process, creation of information took precedence over use. Figure 5 lists the Key Processes in the FETC Business Model order and illustrates which Major Information Categories are created or used by the Key Processes.

Next the "C's" on the chart were placed on a diagonal line by rearranging the Major Information Categories. The intent of this step was to group Major Information Categories that are created and used by the same Key Process(es).

The following step is a matter of judgement. The object is to group the processes and categories into areas called "Process and Information Centers." In defining the Process and Information Center groupings, we intentionally associated processes from the guiding, business, and support grouping of the FETC Business Model together. We looked at several grouping options and settled on what we believe is the most logical. The groupings are illustrated with a shaded box.

Using the defined Process and Information Centers and the "U" information contained in figure 5, we then drew a more easily visualized representation of the relationship between the Key Processes and Major Information Categories, which we call the Strategic IA Structural Model (figure 2).

Information flow in the Strategic IA Structural Model was attained by analyzing the intersections of the Process and Information Centers. This revealed which centers used information developed by other information centers and at what level of frequency.

FIGURE 5   Key Processes vs. Major Information Categories

Key Processes VS Information Categories
showing Used (U) and Created (C)

Key Processes \ Information Categories	Strategic Planning	Organizational Performance	Organizational Information	Political Stakeholder Interaction	Public Relations	End User Interactions	Product Lines	Technical Solutions	Relationship Tools	Partner Interactions	Project Planning	Project Execution and Results	ES&H	Supplier Information	Regulations, Policies & Procedures	Procurement	Budget Formulation	Budget Execution and History	Research Facilities	Site Management	Employment Administration
Institutional Planning	C	U	U	U		U	U			U	U	U					U				U
Measuring Performance	U	C	C					U			U	U						U			
Information Planning & Management	U		C												U				U		
Managing Non-Funding Relationships	U	U	U	C	C	U	U	U			U	U									
Assessing the Market	U			U		C	C	U			U	U									
Product Development	U			U		U	C	C			U	U						U		U	
Funds In	U	U		U		U	U	U	C	C	U	U								U	
Project Implementation	U					U	U	U	U	C	C	C	C	U	U	U	U	U		U	
Procuring												U		C	C	C	U	U			
Manage Financial Resources	U						U		U	U	U	U			C	C	C	C			
Manage Physical Resources							U		U	U				U					C	C	
Manage Human Resources	U	U	U							U					C			U			C

Cyclical Processes (bracket spanning Assessing the Market through Project Implementation)

Appendix B.

Interaction with Institutional Plan Tasks

There is a very strong relationship between the IA developed in Institutional Plan Task 4.3 and the other Institutional Plan tasks. At the very least, since most of FETC's work involves the development, the exchange, or the manipulation of information, having a well-defined architecture allows these activities to occur more smoothly. Work will be performed more effectively with an understanding of where the work fits into the FETC Business Model. More specifically, there are three different levels of interaction between the other Institutional Plan tasks and the IA of Task 4.3.

First, there are tasks that are directly related to the IA Task 4.3 and must be accomplished with close coordination between the tasks. Task 3.1 is such a task. The IA needs to identify Key Processes so that the information flow between processes can be clarified while at the same time, those same processes need to be benchmarked as a part of Task 3.1.

C   Task 3.1 -- Benchmark key processes, including in-house R&D, project management, procurement, budget and finance, and site administration

Second, there are Institutional Plan tasks that need the IA to be implemented before the task can be performed effectively. Tasks 1.1, 2.1, 2.5, and 3.6 require the development of information systems or databases. For each of these tasks, the IA should be established first in order to clarify who generates, uses, and owns the information.

C   Task 1.1 -- Identify specific stakeholders; establish and maintain, in electronic form, a stakeholder data base, including needs and requirements
C   Task 2.1 -- Develop and implement a tracking system for new business
C   Task 2.5 -- Develop a FETC-wide system to track the RD&D development stage (e.g., bench, laboratory) of each of our RD&D projects as well as criteria for allowing projects to graduate to the next development stage
C   Task 3.6 -- Establish a FETC-wide financial management, project management, and communications systems, with appropriate links to Headquarters

Third, Tasks 1.5, 1.6, 2.2, 2.3, 3.2, and 3.4 will benefit from having an implemented IA. These tasks which require collecting, synthesizing, and distributing information are greatly facilitated by a clearly described IA.

C Task 1.5 -- Develop materials (electronic, brochures, display boards, speeches, videos) to communicate our successes

C Task 1.6 -- Develop and implement a corporate annual communication plan for FETC's six stakeholder groups

C Task 2.2 -- Plan for marketing new products and services

C Task 2.3 -- Develop the facilities and information to market new products, services, and thrusts

C Task 3.2 -- Improve work processes through a Labor-Management Partnership Council

C Task 3.4 -- Develop a schedule and action plan for implementing the Baldrige principles, and apply for the President's Quality Award

Appendix C.

How Key Processes Support Institutional Goals

Certainly, any goal the organization establishes for itself must have at least one process that helps to further that goal. Goals with no supporting processes can not be realized by the organization. Similarly, processes that help to support multiple goals may indicate some sense of importance of that process. Figure 3 helps to relate Key Processes with institutional goals established in the FETC Institutional Plan. A short explanation of how the team saw each process supporting the institutional goals follows.

Key Process	Institutional Goal	Justification
Institutional Planning	Our activities are aligned with stakeholder needs and requirements	It is through the planning process that consistent goals and strategies are developed that insure stakeholder needs and requirements are pursued.
	Our stakeholders know about our mission accomplishment	Stakeholders initially learn of FETC mission accomplishments during the institutional planning process when FETC seeks dialogue with stakeholders for planning input.
	Our results are making a significant contribution to solving national and international energy and environmental problems.	As a result of effective institutional planning, appropriate national and international energy and environmental problems are pursued. Planning allows the effective utilization of scarce and valuable financial and human resources.
	We achieve the funding level mix depicted in the Institutional Plan	Institutional planning will allow FETC effectively address funding sources needs.
	Our overhead rate must be comparable with, or below, that of well-managed, world-class laboratories in the private sector.	Institutional planning will allow effective management of internal resources thereby leading to competitive overhead rates.

Key Process	Institutional Goal	Justification
	All employees understand and embrace FETC's goals, guiding principles, and strategic intent.	Part of the planning process is to get by-in by the stakeholders (employees).
	We seek increased diversification of our work force, including gender, ethnicity, age, and skills.	Institutional planning helps to establish areas of future activity and helps to establish the number of employees needed and as well as their required skills and expertise. Once those directions allow others to meet those needs in a diverse way.
Measuring Performance	Our stakeholders know about our mission accomplishment	By measuring FETC performance, FETC has quantitative data to share with stakeholders concerning our accomplishments.
	Our results are making a significant contribution to solving national and international energy and environmental problems.	It is through measuring performance that FETC will be able to determine whether we are making significant contributions to solving energy and environmental problems.
	We have efficient and effective processes and systems in place	One needs to measure the performance of FETC systems and processes to determine if they are efficient and effective.
	We use measurements to continually improve our work processes, stakeholder focus, productivity, and responsiveness.	Performance measurement is needed quantify improvements in processes, stakeholder focus, productivity, and responsiveness.
	FETC wins the President's Quality Award	Performance measurement is a key piece of the president's Quality Award.
	Our on-site infrastructure is best-in-class, cost-effective, and aligned with FETC's mission.	One needs to measure performance to determine if the FETC infrastructure is best-in-class, cost-effective, and aligned with FETC's mission.

Key Process	Institutional Goal	Justification
	Our stakeholders perceive each FETC employee as someone they want to work with.	Measurements will allow the determination of how each FETC employee is perceived.
	All FETC employees, both Federal and site support contractor, contribute effectively to our success.	Performance measurement will show how effectively FETC and contractor employees contribute to FETC's success.
	FETC is known in our immediate energy and environmental corridor communities as a responsive, valuable asset, and as a good neighbor.	Performance measurement will allow FETC to improve and become recognized within the immediate energy and environmental communities.
Information Planning & Management	Our stakeholders know about our mission accomplishment	FETC needs to be able to communicate within itself and without the organization so that it knows what are its mission accomplishments and so that it can communicate those accomplishments to the stakeholders.
	We have efficient and effective processes and systems in place	Evidence that FETC has efficient and effective processes and systems in place will become apparent to most stakeholders through the information management process.
	Our on-site infrastructure is best-in-class, cost-effective, and aligned with FETC's mission.	Information is key to maintaining effective infrastructure. Implementing advances in information systems development, will contribute to cost effective ans best-in-class infrastructure.
	Information is available to make sound business decisions.	The management and planning of information use is critical to making information available for business decisions.
	We respond rapidly to initiatives and opportunities.	A key piece of rapid responses is having the needed information available. Information planning and management is an important part of that availability.

Key Process	Institutional Goal	Justification
Managing Non-Funding Relationships	Our stakeholders know about our mission accomplishment	Part of the management of non-funding relationships is the communication of mission accomplishments to our stakeholders.
	Our results are making a significant contribution to solving national and international energy and environmental problems.	Sharing our results with non-funding stakeholders improves the dialogue with these stakeholders and contributes to their involvement in our goals and objectives.
	All employees understand and embrace FETC's goals, guiding principles, and strategic intent.	Only through a process of continuous dialogue, where employees feel they are contributing to the Center's vision will they embrace its goals and principles.
	Our stakeholders perceive each FETC employee as someone they want to work with	Part of the management of non-funding relationships is the management of how FETC employees are perceived.
	FETC is known in our immediate energy and environmental corridor communities as a responsive, valuable asset, and as a good neighbor.	Part of managing non-funding relationships is the communication of FETC's abilities and accomplishments that will support our reputation as a valuable asset to the energy and environmental community.
Assessing the Market	Our activities are aligned with stakeholder needs and requirements	It is through assessing the market that our activities will be alighted with stakeholder needs and requirements.
	We place greater emphasis on R&D activities at earlier stages of the development spectrum	Assessing the market will help FETC know which R&D projects should be pursued and how much emphasis to place on early development stages.
	We achieve the funding level mix depicted in the Institutional Plan	Assessing the market will allow FETC to understand where funding opportunities exist and to better match funding opportunities with FETC's plans.

Key Process	Institutional Goal	Justification
	We obtain funding from each new business area	By assessing the market, FETC will better gauge which new business area have funding available.
	Information is available to make sound business decisions.	Part of sound business decisions is the availability of market conditions, directions, and needs that comes from assessing the market.
	We respond rapidly to initiatives and opportunities.	Before FETC can respond rapidly to a new initiative or opportunity, it needs to know what the market needs as a product. This knowledge comes from assessing the market.
Product Development	Our activities are aligned with stakeholder needs and requirements	Since much of FETC's activities are directed through the product development teams, focused product development will help align FETC work with stakeholder needs and requirements.
	Our results are making a significant contribution to solving national and international energy and environmental problems.	Focused product development will help assure that FETC results make significant contributions to solving national energy and environmental problems.
	We place greater emphasis on R&D activities at earlier stages of the development spectrum	The allocation of resources during the product development process allows the placement of greater emphasis on the early stages of R&D development.
	We obtain funding from each new business area	To obtain funding in all new business areas, FETC need to be sure the products being pursued are appropriate for the new area. The product development process is the process that determines which products are developed by FETC.
	We respond rapidly to initiatives and opportunities.	The effectiveness and efficiency of the product development process will play a major part in how rapidly FETC responds to new initiatives and opportunities.
Funds In	Our stakeholders know about our mission accomplishment	To obtain funding for FETC work, part of the process of funds in will be the communication of FETC's successes and contributions.

Key Process	Institutional Goal	Justification
	We achieve the funding level mix depicted in the Institutional Plan	Achieving the desired funding mix will be achieved by pursuing the Funds In process in the right areas.
	We obtain funding from each new business area	It will be through Funds In that funding in each new business area will be achieved.
	Our overhead rate must be comparable with, or below, that of well-managed, world-class laboratories in the private sector.	Stakeholders must be confident that scarce Federal resources for research and development are used in the most cost effective manner. If FETC is not competitive, resources will be expended where cost effectiveness can be demonstrated.
Project Implementation	Our activities are aligned with stakeholder needs and requirements	Proper project implementation will need to occur to insure FETC activities are aligned with stakeholder needs.
	Our stakeholders know about our mission accomplishment	In order to rely on their continued support, our mission accomplishments, even to the project level, must be communicated to our stakeholders.
	Our results are making a significant contribution to solving national and international energy and environmental problems.	Proper project implementation will need to occur to insure FETC activities Make a significant contribution to solving national energy and environmental problems.
	We place greater emphasis on R&D activities at earlier stages of the development spectrum	The way a project is implemented will help assure greater emphasis will be placed on earlier stages of the R&D development spectrum.
	FETC wins the President's Quality Award	Effective project implementation will supply valuable support and documentation for the President's Quality Award nomination.
	We respond rapidly to initiatives and opportunities.	Effective project implementation will help FETC respond rapidly to new initiatives and opportunities.

Key Process	Institutional Goal	Justification
Procuring	Our results are making a significant contribution to solving national and international energy and environmental problems.	The efforts of our R&D contractors and our assistance partners equally contribute to the Center's mission accomplishment.
	We have efficient and effective processes and systems in place	The ability to involve the private sector in the accomplishment of the Center's mission is evidenced by the efficiency and effectiveness of our procuring processes and systems in place.
	Our on-site infrastructure is best-in-class, cost-effective, and aligned with FETC's mission.	The procuring process is the mechanism for involving the private sector in the accomplishment of the Center's mission. Without this vital infrastructure, the Center could not achieve its objectives.
	We respond rapidly to initiatives and opportunities.	Utilizing the experience, expertise, and the flexibilities in the private sector, through the procuring process, enables FETC to rapidly respond to initiatives and opportunities where appropriate.
	FETC is known in our immediate energy and environmental corridor communities as a responsive, valuable asset, and as a good neighbor.	Contributing to the local economies, through the procuring process, is one way FETC demonstrates that it is a valuable asset to corridor communities.
Manage Financial Resources	We achieve the funding level mix depicted in the Institutional Plan	Demonstrating our ability to manage financial resources will contribute to our achieving a stable mix of funding levels.
	We have efficient and effective processes and systems in place	Evidence of FETC having effective and efficient processes and systems in place is the proper management of its financial resources.

Key Process	Institutional Goal	Justification
	Our overhead rate must be comparable with, or below, that of well-managed, world-class laboratories in the private sector.	The effective management of FETC's financial resources will help assure our overhead rate is competitive.
	Our on-site infrastructure is best-in-class, cost-effective, and aligned with FETC's mission.	FETC cannot demonstrate a best-in-class infrastructure without effective financial management because financial management serves as the cornerstone of any organization's infrastructure.
	Information is available to make sound business decisions.	Part of the business decision process is having the necessary financial information available at he right time. The management of financial resources will allow for this communication to occur.
Manage Physical Resources	We have efficient and effective processes and systems in place	Defining and understanding the processes within FETC can lead to process improvement, resulting in process efficiency and effectiveness.
	Our overhead rate must be comparable with, or below, that of well-managed, world-class laboratories in the private sector.	The effective and efficient management of FETC physical resources will help to assure a competitive overhead rate.
	Our on-site infrastructure is best-in-class, cost-effective, and aligned with FETC's mission.	How FETC's physical resources are managed will determine whether our infrastructure is best-in-class.
Manage Human Resources	We have efficient and effective processes and systems in place	The effective and efficient management of FETC's human resource will contribute to this goal.

Key Process	Institutional Goal	Justification
	Our overhead rate must be comparable with, or below, that of well-managed, world-class laboratories in the private sector.	Effective management of FETC's human resource will help to insure our overhead rate is competitive with other facilities.
	Our on-site infrastructure is best-in-class, cost-effective, and aligned with FETC's mission.	An effective and efficient human resource management process will contribute to a best-in-class infrastructure.
	Our stakeholders perceive each FETC employee as someone they want to work with	Effective and efficient human resource management will contribute to FETC stakeholder perceiving our employees as being someone they want to work with.
	All FETC employees, both Federal and site support contractor, contribute effectively to our success.	Effective and efficient management of FETC human resources will help assure that both Federal and site support contractors contribute effectively to our success.
	We respond rapidly to initiatives and opportunities.	FETC needs well managed human resources to be able to respond rapidly to new initiatives and opportunities.
	We seek increased diversification of our work force, including gender, ethnicity, age, and skills.	It is through the management of FETC's human resource that increased diversification will occur.

Appendix D.

Information Architecture Planning Team Charter

<u>Background</u>:

The Federal Energy Technology Center (FETC) spends millions of dollars per year on computing, information, and communication activities. These information infrastructure activities profoundly influence all of our employees, work processes, and customer interactions.

In January 1996, the Morgantown TQM Steering Committee chartered a nine-person team *to plan METC's Information Architecture including cost and schedule.* The team was given five months to produce a product. On June 21, 1996, the team presented a product that consisted of a methodology to create FETC's Information Architecture, and a prototype Information Architecture. The methodology is based primarily on three references:

- "Management of Information Systems" by Dickson and Wetherbe,
- "Information System Planning Guide" from IBM, and
- "Global Best Practices" from Arthur Anderson.

The team recommended implementation of an Information Architecture and also recommended that management appoint one or more persons to achieve the organization's goals through information system. Resulting from these recommendations, the Management and Communication Division was tasked to serve as "champion" of the FETC Information Architecture, responsible for Information Architecture implementation and continued development.

<u>Mission</u>:

Design, develop, and prepare an Information Architecture, including outlining sequences, constraints, and guidelines for implementation that will enable FETC to effectively accomplish it's goals by aligning FETC's Information Systems with the Center's business processes.

<u>Objectives</u>:

Review existing methods to develop supplemental data as necessary to select a final method for the design of a FETC Information Architecture.

Apply the methodology to produce a FETC Information Architecture.

Customers:

FETC Employees at all levels of the organization.

Measures of Success:

Meet defined team schedule.

Develop Information Architecture.

Completeness of Information Architecture measured by the lack of omissions in the architecture when measured/compared with the actual business processes.

Expected benefits:
1. Decreased Management Information Systems costs.
2. More focused communication.
3. Eliminate data/information redundancies.
4. Identify poorly supported information flows
5. Identify inadequately supported Key Processes.
6. More efficient and effective information system development.

Team Sponsor: Fred Brown

Team Membership:

NAME	Organization	Office	Site
Heather Quedenfeld, Facilitator	EA-30	OSEA	Mgn
Joy Cumley, Facilitator	ST-60	OST	Mgn
Scott Renninger	PM-10	OPM	Mgn
Martin Beck	PS-30	OPSSO	Pgh
Kevin Williams	PS-20	OPSSO	Mgn
Ann Dunlap	DI-03	DIR	Pgh
Mark Estel	EA-30	OSEA	Mgn
John Capets	EA-30	OSEA	Pgh
J. Christopher Ludlow	ST-30	OST	Mgn
Curt Nakaishi	FS-10	Product Mgt	Mgn

Schedule:

Event	Month
Team building	0-1
Review IA related documents	0-2
Validate methodology	1-3
Implementation Plan	4-8

Appendix E.

Information Architecture Transition to Implementation Team

FETC's institutional plan was issued in September, 1997. Thirty-two individual tasks are defined in support of achieving the five institutional goals. Task 4-3 directs the organization to "Develop FETC's Information Architecture leading to alignment of its information systems with its business processes". Task 4-3 is being performed in two parts. The first part, the effort completed by the IAPT, is the development of a high level architecture. The second part will be performed by the Information Architecture Transition to Implementation (IATI) team as a follow-on to the IAPT's activities. A completion date of 12/31/1998 has been set for the IATI. The purpose of the IATI team is to develop or oversee the development of the intermediate and detailed levels of FETC's IA.

Issues for the IATI to address:

C The IATI should assess and make recommendations on the structure within FETC that oversees and carries out information planning and management activities. The objective of this issues is to make IA management a part of FETC and to ensure that FETC reaps the full benefits of IA.

C The IATI should address the issue of a funding mechanism within FETC to ensure that systems that are designed and developed have a FETC wide perspective. Currently the funding of information systems flows through the division or office level. With this funding method the resulting systems will not be developed to meet the needs of FETC as a whole.

C IA awareness and training should be addressed by the IATI. For IA to be successful, everyone at FETC must have an understanding of how their work fits within the IA.

The IATI will provide the following deliverables:

C Lower levels of detail to both the Key Processes and Major Information Categories.

C Define information owners for the lower levels of information.

C Work with IRMD to ensure Technical and Programming standards are available to support migration to the IA.

C An analysis of FETC resources and capabilities in light of IA requirements.

C Develop migration plan from current applications, data, and technology structure to a structure in line with the IA. This plan will include a methodology to prioritize migration activities, cost, and schedule.

Appendix F.

Survey Results Analysis and Technique

Having developed Key Processes and Major Information Categories, the next step in our process was to develop and issue a survey. The objective of the survey was twofold. First, we wanted to validate the Key Processes and Major Information Categories, and secondly, we needed to gain information that would assist us in the development of the Strategic IA Structural Model.

The survey determined under which Key Processes information is created, read, updated, or deleted. The frequency with which information is used was also determined.

The team decided that the most efficient way to validate the Key Processes and Major Information Categories was to use a survey. Rather than survey everyone at the Center or survey randomly, the team decided to develop a survey target group. The group was developed by choosing individuals at the top of the organization and working our way through every divisional level of FETC so every division had at least one person being asked to complete a survey. Forty-eight employees comprised the final survey target group. In an attempt to inform the potential respondents of the importance of Information Architecture to FETC's future and to facilitate survey taking and collection, information meetings were held at each site (November 5&6,1997) for the identified survey group. Each targeted individual had an appointment put on their personal calender. Additionally, the team sent out a FETC-wide invitation for anybody else interested in learning about Information Architecture. Twenty-seven people attended the November 5 meeting and twenty-three people were at the November 6 meeting. Of the fifty people who attended the meetings, twenty-eight people turned in completed surveys. Of the original target group of forty-eight, twenty-nine people complete a survey. Fifty-six usable surveys were collected in all, representing 19 out of the 21 FETC divisions

The survey itself had eleven Key Processes end twenty-two Major Information Categories identified by the team. A copy is located in Appendix G. The respondents were asked to look at each Key Process and decide if they had activities in the particular process. If the answer was yes, they were prompted to fill in the frequency (seldom, occasionally, frequently, or not at all) with which they either created, read, used, or deleted each of the twenty-two Major Information Categories as they applied to that Key Process.

Group Description	Surveys Distributed	Surveys Collected	Response Rate
Target Group	48	29	60%
Meeting Attendees	50	28	56%
IA Team	8	6	75%
Others	10	2	20%

Appendix G.

Name:_____   *Division:_____*

INFORMATION ARCHITECTURE SURVEY

Instructions:

Each page of this survey is designed to collect information about the Key Processes used at FETC. For each key process, we are interested in learning which information category is used by you. Please read the KEY PROCESS and INFORMATION CATEGORY descriptions before filling out the survey.

The survey is divided into 11 sections, one for each KEY PROCESS. You are encouraged to select the KEY PROCESSES, any or all, which you feel apply to your work at FETC. Indicate whether you perform any of the following activities on the information during your activities for THAT process. Be sure to keep your response within the context of that particular process. Multiple activities for an Information Category are allowed.

Created   -   This type of information is created by you during this key process.
Read   -   This type of information is read or used by you during this key process
Updated   -   This type of information is updated or modified by you during this key process
Deleted   -   This type of information is deleted by you during this key process.

Mark your selections by using the following numerical scale to indicate your level of activity. If you have no activity for a particular Information Category, leave the box blank.

1 - Seldom
2 - Occasionally
3 - Frequently
BLANK - Not at all

Although you may initially feel that you only have a few Key Process sections to fill out, we encourage you to read over the other Key Process sections and respond to them, even if your activity in that process is slight.

WHEN COMPLETED IN MORGANTOWN, PLEASE RETURN TO :
                                        SCOTT RENNINGER
                                        MS CO4

WHEN COMPLETED IN PITTSBURGH, PLEASE RETURN TO:
                                        MARTY BECK
                                        MS 921-232

Key Process Definitions:

1.   **<u>Analysis:</u>**   The process by which FETC acquires, analyses, and synthesizes information.

2.   **<u>Financial Resources:</u>**   The process by which FETC manages financial resources through formulating the budgets, executing the budget and accounting of those.

3.   **<u>Human Resources:</u>**   The process by which FETC manages its human resources, such as hiring, developing and promoting.

4.   **<u>Improvement & Change:</u>**   The process by which FETC monitors, measures, and improves its performance.

5.   **<u>Information Resources:</u>**   The process by which FETC manages its information resources, such as, mail, library, telephone systems, corporate knowledge, and computer services.

6.   **<u>Institutional Planning:</u>**   The process by which FETC sets organizational goals and objectives to meet identified external and internal drivers and constraints.

7.   **<u>Market & Sell:</u>**   The process by which FETC establishes and maintains relationships with funding sponsors and users of our products and services to understand their needs and develop products and services to meet those needs.

8.   **<u>Physical Resources:</u>**   The process by which FETC manages its physical resources, such as, property, security, buildings and facilities.

9.   **<u>Procurement:</u>**   The process by which FETC obtains goods or services

10.   **<u>Projects:</u>**   The process by which FETC implements, oversees and delivers innovative technical energy and environmental solutions.

11.   **<u>Stakeholder Relationships:</u>**   The process by which FETC establishes and maintains a dialogue with the administration, our employees and on-site contractors, and the national, regional, and local citizenry.

Information Category Definition

1. **ES&H:**   The ES&H information category focuses on the information created and used to insure the compliance with federal, state, and site ES&H regulations and policies. Information like NEPA files and reports, SARS reviews and reports, environmental compliance reports, OSHA worker exposure criteria , hazardous waste manifest sheets, and corrective action plans would be a part of this category.

2. **Research Facilities :**   The Research Facilities category would include information concerning buildings, labs, and computer equipment and software used in the conduct of on-site research. This information would be used to address such questions such as are the resources needed to meet research goals for FETC products available.

3. **Site Management:**   This category includes information concerning the management of FETC on-site physical resources. Such information could include the construction and maintenance of on-site facilities, site work plans, operational plans, site and personnel security plans and data, and geophysical data.

4. **Support Services:**   The Support Services information category contains the information needed to manage the FETC support services. This information includes support contractor work plans, monthly const reports, and change authorization requests.

5. **Project Planning:**   This category focuses on the areas of concern for government, academia, and industry. The information required would include: current project plans, new project concepts, current/past project technologies, reviews of concepts, technical publications and literature (in and out-side).

6. **Partner Interactions:**   This category focuses on technology transfer mechanisms and customer feedback. The information required would include: CRADA requests and proposals, customer (governments, academia, industry) needs, contractor schedules, technical information, customer contacts (name, phone number), project/product points of contact, technical presentations scheduled (in and out-side).

7. **Project Synopsis, Reports and Results:**   This category focuses on projects supported by both in-house and contractor activities. The information for this category includes: project description, schedules, projected costs, project status reports, points-of-contact, background information, operation plans, project management plans, reviews, project team members. This category also includes information on results including publications, technical reports, status reports (in-house & contractor), final project reports, project raw data, patents and new concepts.

8. **Budget Formulation**:   Involved is the development of budgets including planning requirements, requests and projections for future budgets. Included are both local (internal) and headquarter as well as congressional input.

9. **Budget execution and history**:   Involved is the administration and tracking of all expenditures to assure that each entity stays within approved budgets. This is accomplished through various financial instruments and reports.

10. **Procurement**:   This includes all procurement activity including small purchases, contracts, financial assistance and the administration of them from origination to closeout.

11. **Supplier information**:   This is who supplies and services for FETC operations and what they provide, including level of quality.

12. **Information Inventories**:   This involves the actual availability of automated and non-automated inventories as well as the actual information created by the organization. Includes shared information, e.g.. Intranet, weeklies, monthlies.

13. **Organizational Performance**:   How effective FETC is performing its long-term mission of solving national energy and environmental problems. Specific methods to measure our performance include conducting External Reviews of FETC Programs and Business Practices and conducting internal performance assessments using the FETC Measurement System Methodology.

14. **Institutional Planning***:*   Provides an indication of what FETC's core competencies are and how FETC can apply them to move consistently with the long-term mission. The institutional planning includes SWOT analysis, market analysis and trends, new major thrusts, core capabilities, organizational goals and success measures, resource targets and mix, mission/vision, and integration of product plans and business sectors.

15. **Organizational information:**   How FETC shares information and develops internal relationships and includes formal lines of authority (Organizational chart), roles and responsibilities, teams and work groups.

16. **Regulations, Policies & Procedures:**   Items FETC must do which include laws and regulations, Congressional guidance, Industry standards, DOE and FETC orders, agreements, and other mandates.

17. **Product Lines**: Definition and aim of a product offered by FETC. The category includes plans to promote the product. List of projects and activities which supporting the product.

18. **Stakeholder/End user Interactions:** List of entities who have an interest in the Center's activities. The category includes Stakeholder's needs, wants, perception, and level of satisfaction with FETC and contains response to Stakeholder's inquiry and number of contacts with Stakeholders.

19. **Political Stakeholder Interactions:** List of political entities who have an interest in the Center's activities. The category includes Political Stakeholder's needs, wants, perception, and level of satisfaction with FETC.

20. **Public relations:** Methods and activities employed to promote a favorable relationship with the public. The category includes press releases and other publications, Freedom of Information responses and community involvement information.

21. **Employment Administration**:   All information relative to the acquisition, development, placement, retention, compensation, and well-being of employees. This includes such programs as recruitment and staffing, pay administration, benefits and leave administration, performance and incentive awards, labor relations, training and employee development, discipline and position management.

22. **Corporate Knowledge**:   The sum total of the information, knowledge, skills and abilities contained within the hearts and minds of our employees. Although not accessible via traditional information retrieval methods, this dynamic repository represents one of FETC's most marketable and readily available resources.

Key Process: **Analysis:**   The process by which FETC acquires, analyses, and synthesizes information.
Description of Your Activity:_____
_____

My work at FETC includes activity in this Key Process: **YES____**   **NO____**

1 = Seldom,   2 = Occasionally,   3 = Frequently,   Blank = Not at All

		C	R	U	D
1.	ES&H information is required for my work in this key process				
2.	Research Facilities information is required for my work in this key process.				
3.	Site Management information is required for my work in this key process.				
4.	Support Services information is required for my work in this key process.				
5.	Project Planning information is required for my work in this key process.				
6.	Partner Interaction information is required for my work in this key process.				
7.	Project Synopsis, Reports and Results information is required for my work in this key process.				
8.	Budget Formulation information is required for my work in this key process.				
9.	Budget Execution and History information is required for my work in this key process.				
10.	Procurement information is required for my work in this key process.				
11.	Supplier Information information is required for my work in this key process.				
12.	Information Inventories information is required for my work in this key process.				
13.	Organizational Performance information is required for my work in this key process.				
14.	Institutional Planning information is required for my work in this key process.				
15.	Organizational Information information is required for my work in this key process.				
16.	Regulation, Policies, & Procedures information is required for my work in this key process.				
17.	Product Lines information is required for my work in this key process.				
18.	Stakeholder/End User Interactions information is required for my work in this key process.				
19.	Political Stakeholder Interactions information is required for my work in this key process.				
20.	Public relations information is required for my work in this key process.				
21.	Employment Administration information is required for my work in this key process.				
22.	Corporate Knowledge information is required for my work in this key process.				
	Additional Categories:_____				

Key Process: **Financial Resources:** The process by which FETC manages financial resources through formulating the budgets, executing the budget and accounting of those.

Description of Your Activity:_____

_____

My work at FETC includes activity in this Key Process: **YES** _____ **NO** _____

1 = Seldom,   2 = Occasionally,   3 = Frequently,   Blank = Not at All

		C	R	U	D
1.	ES&H information is required for my work in this key process				
2.	Research Facilities information is required for my work in this key process. . . .				
3.	Site Management information is required for my work in this key process. . . .				
4.	Support Services information is required for my work in this key process. . . .				
5.	Project Planning information is required for my work in this key process. . . .				
6.	Partner Interaction information is required for my work in this key process. . . .				
7.	Project Synopsis, Reports and Results information is required for my work in this key process. . . .				
8.	Budget Formulation information is required for my work in this key process. . . .				
9.	Budget Execution and History information is required for my work in this key process. . . .				
10.	Procurement information is required for my work in this key process. . . .				
11.	Supplier Information information is required for my work in this key process. . . .				
12.	Information Inventories information is required for my work in this key process. . . .				
13.	Organizational Performance information is required for my work in this key process. . . .				
14.	Institutional Planning information is required for my work in this key process. . . .				
15.	Organizational Information information is required for my work in this key process. . . .				
16.	Regulation, Policies, & Procedures information is required for my work in this key process. . . .				
17.	Product Lines information is required for my work in this key process. . . .				
18.	Stakeholder/End User Interactions information is required for my work in this key process. . . .				
19.	Political Stakeholder Interactions information is required for my work in this key process. . . .				
20.	Public relations information is required for my work in this key process. . . .				
21.	Employment Administration information is required for my work in this key process. . . .				
22.	Corporate Knowledge information is required for my work in this key process. . . .				
	Additional Categories:_____				

Key Process: **Human Resources:** The process by which FETC manages its human resources, such as hiring, developing and promoting.

Description of Your Activity:_____

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My work at FETC includes activity in this Key Process: **YES**_____ **NO**_____

1 = Seldom,   2 = Occasionally,   3 = Frequently,   Blank = Not at All

	C	R	U	D
1. ES&H information is required for my work in this key process				
2. Research Facilities information is required for my work in this key process.				
3. Site Management information is required for my work in this key process.				
4. Support Services information is required for my work in this key process.				
5. Project Planning information is required for my work in this key process.				
6. Partner Interaction information is required for my work in this key process.				
7. Project Synopsis, Reports and Results information is required for my work in this key process.				
8. Budget Formulation information is required for my work in this key process.				
9. Budget Execution and History information is required for my work in this key process.				
10. Procurement information is required for my work in this key process.				
11. Supplier Information information is required for my work in this key process.				
12. Information Inventories information is required for my work in this key process.				
13. Organizational Performance information is required for my work in this key process.				
14. Institutional Planning information is required for my work in this key process.				
15. Organizational Information information is required for my work in this key process.				
16. Regulation, Policies, & Procedures information is required for my work in this key process.				
17. Product Lines information is required for my work in this key process.				
18. Stakeholder/End User Interactions information is required for my work in this key process.				
19. Political Stakeholder Interactions information is required for my work in this key process.				
20. Public relations information is required for my work in this key process.				
21. Employment Administration information is required for my work in this key process.				
22. Corporate Knowledge information is required for my work in this key process.				
Additional Categories:_____				

Key Process: **Improvement & Change:**   The process by which FETC monitors, measures, and improves its performance.

Description of Your Activity:_____

_____

My work at FETC includes activity in this Key Process: **YES____**   **NO____**

1 = Seldom,   2 = Occasionally,   3 = Frequently,   Blank = Not at All

		C	R	U	D
1.	ES&H information is required for my work in this key process				
2.	Research Facilities information is required for my work in this key process.				
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17.	Product Lines information is required for my work in this key process.				
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19.	Political Stakeholder Interactions information is required for my work in this key process.				
20.	Public relations information is required for my work in this key process.				
21.	Employment Administration information is required for my work in this key process.				
22.	Corporate Knowledge information is required for my work in this key process.				
	Additional Categories:_____				

Key Process: **Information Resources:**   The process by which FETC manages its information resources, such as, mail, library, telephone systems, corporate knowledge, and computer services.

Description of Your Activity:_____

_____

My work at FETC includes activity in this Key Process: **YES____**   **NO____**

1 = Seldom,   2 = Occasionally,   3 = Frequently,   Blank = Not at All

		C	R	U	D
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21.	Employment Administration information is required for my work in this key process.				
22.	Corporate Knowledge information is required for my work in this key process.				
	Additional Categories:_____				

Key Process: **Institutional Planning:** The process by which FETC sets organizational goals and objectives to meet identified external and internal drivers and constraints.

Description of Your Activity:_____

_____

My work at FETC includes activity in this Key Process: **YES** ____ **NO** ____

1 = Seldom,   2 = Occasionally,   3 = Frequently,   Blank = Not at All

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21.	Employment Administration information is required for my work in this key process.				
22.	Corporate Knowledge information is required for my work in this key process.				
	Additional Categories:_____				

Key Process: **Market & Sell:**   The process by which FETC establishes and maintains relationships with funding sponsors and users of our products and services to understand their needs and develop products and services to meet those needs.

Description of Your Activity:_____

_____

My work at FETC includes activity in this Key Process: **YES_____**   **NO_____**

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21.	Employment Administration information is required for my work in this key process.				
22.	Corporate Knowledge information is required for my work in this key process.				
	Additional Categories:_____				

Key Process: **Physical Resources:** The process by which FETC manages its physical resources, such as, property, security, buildings and facilities.

Description of Your Activity:_____

_____

My work at FETC includes activity in this Key Process: **YES**_____ **NO**_____

1 = Seldom,   2 = Occasionally,   3 = Frequently,   Blank = Not at All

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21.	Employment Administration information is required for my work in this key process.				
22.	Corporate Knowledge information is required for my work in this key process.				
	Additional Categories:_____				

Key Process: Procurement: The process by which FETC obtains goods or services
Description of Your Activity:_____
_____

My work at FETC includes activity in this Key Process: **YES**____   **NO**____

1 = Seldom,   2 = Occasionally,   3 = Frequently,   Blank = Not at All

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21.	Employment Administration information is required for my work in this key process.				
22.	Corporate Knowledge information is required for my work in this key process.				
	Additional Categories:_____				

Key Process: **Projects:** The process by which FETC implements, oversees and delivers innovative technical energy and environmental solutions.

Description of Your Activity:_____

_____

My work at FETC includes activity in this Key Process: **YES**_____ **NO**_____

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21.	Employment Administration information is required for my work in this key process.				
22.	Corporate Knowledge information is required for my work in this key process.				
	Additional Categories:_____				

Key Process: **Stakeholder Relationships:** The process by which FETC establishes and maintains a dialogue with the administration, our employees and on-site contractors, and the national, regional, and local citizenry.

Description of Your Activity:_____

_____

My work at FETC includes activity in this Key Process: **YES**_____ **NO**_____

1 = Seldom,   2 = Occasionally,   3 = Frequently,   Blank = Not at All

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	Additional Categories:_____				